

THE WALL STREET JOURNAL.

Put Up Your Dukes: Fighting Disease With Soap and Water

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May 12, 2009; D1

Fear of swine flu is fading, but there are still plenty of reasons to wash your hands frequently.

The list of infections that can spread via unwashed hands reads like the Biblical plagues, including staph, strep, salmonella, E. coli, hepatitis, MRSA (methicillin-resistant Staphylococcus aureus), colds, flu and norovirus -- the infamous cruise-ship bug.

The importance of hand washing has been known since 1847, when a doctor named Ignaz Semmelweis suspected that maternity patients were dying in his Vienna hospital because med students treated them right after working on cadavers. When he instituted hand-cleaning, the deaths fell sharply.

The Centers for Disease Control and Prevention says hand washing is the most effective way to stay healthy. But many people don't do it often enough, or long enough, to be effective. Here's a guide:

When to do it. Wash your hands every time you use the bathroom. Every surface presents an opportunity for germs to hitchhike out. "Who thinks to clean the latch on the inside of the stall door? Try nobody," says Jim Mann, executive director of the Handwashing for Life Institute, which advises food-service providers around the world on best hand-hygiene practices.

Also wash your hands whenever you change a diaper, pick up animal waste, sneeze, cough or blow your nose; when you take public transportation, insert or remove contact lenses, prepare food, handle garbage and before eating. Few people are as conscientious as they should be. Mr. Mann recalls being in meetings to discuss hand hygiene: "Everybody shakes hands. You finish the talk, and everybody runs for the food line. Nobody washes their hands."

How to do it. Soap and water is the gold standard. In a recent study in the journal *Clinical Infectious Diseases*, researchers in Australia doused the hands of 20 health-care workers with human H1N1 flu virus. Soap and water removed slightly more virus than three alcohol-based hand rubs. When volunteers didn't clean their hands, most of the virus was still present an hour after exposure.

It's the mechanical process of washing that's so effective. Soap molecules surround and lift the germs, friction from rubbing your hands loosens them, and water rinses them down the drain.

Experts recommend using warm water -- mainly for comfort, so you'll wash longer. Use liquid soap if possible. Bar soaps can harbor germs, though they'll likely rinse off with water.

Use enough soap to build a lather. Lace your fingers together to cover all the surfaces. Rub the fingertips of one hand into the palm of the other, then reverse. Keep rubbing for as long as it takes to sing "Happy Birthday" twice. (Some experts prefer "Row, Row, Row Your Boat." But any tune will do as long as it lasts at least 15 seconds.)

"The typical 'splash and dash' that most people do doesn't do anything," says Mr. Mann.

Rinse thoroughly. Residual soap can make hands sore. Leave the water on while you grab a paper towel and use it to shut off the faucet. Take it with you to use on the door handle as well.

Drying lessons. Many hand-hygiene experts are down on hand dryers -- chiefly because few people have the patience to dry completely and end up wiping their hands on their clothes. "That's fine -- unless your pants have been down around your ankles in the stall," Mr. Mann says.

Air dryers can also blow remaining germs as far as six feet away.

Antibacterial soap? In 2005, a Food and Drug Administration panel voted 11-to-1 that antibacterial soaps are no more effective at keeping people healthy than regular soap. There may be some downside too. Some antibacterial ingredients like triclosan leave a residue on the skin that continues killing some bacteria. Critics worry that the remaining bacteria could become resistant, not only to soap but also to antibiotics. "To our knowledge, it's not happened, but it's theoretically possible," says **Elaine Larson, a professor in the schools of nursing and public health at Columbia University**. Another problem with antibacterial soap, she says, is that it gives people a false sense of security. "People think, 'Ah -- it's antibacterial. So the germs are gone.' That's a false perception," Dr. Larson says.

Hand sanitizers. It's not often that a personal-care product gets a presidential endorsement. Some drug stores sold out after Barack Obama echoed the CDC's recommendation that people use alcohol-based hand sanitizers when soap and water aren't available to help stop the spread of swine flu.

Experts say they must be at least 60% alcohol to kill germs. "Alcohol ruptures their cell membranes -- it causes them to explode," says Dr. Larson, although she notes that if your hands are visibly dirty, soap and water is much preferable.

Curiously, the FDA does not allow over-the-counter hand sanitizers to claim they kill viruses. The CDC's recommendations are based on information published since the FDA ruling, showing that alcohol-based sanitizers are effective at killing viruses, specifically the H1N1 strain, says Nicole Coffin, a CDC spokeswoman.

Can you overdo handwashing? Yes. "Try to strike a balance between being obsessive-compulsive and being reasonable," says Dr. Larson. "And if there is some kind of outbreak like with the flu or SARS, then there is reason for more caution."